



# United States Navy Facilities Excellence Guide

## Flagship Standards for the Shore Establishment







# PLANNING FOR EXCELLENCE...

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*"The bottom line for the Navy is that our installations really are part of our combat power..."*

**-- RADM Christopher Weaver**  
**Commander, Navy Installations Command**

The Navy Facilities Excellence Plan (NFEP) serves as a set of overarching standards and principles that express the CNI vision for improving and maintaining Navy installations and facilities. This guide reinforces the belief that maintaining excellence in installation planning and design is directly related to enhancing readiness and maintaining the Navy mission.

The focus on orderly installation improvement and reformation based on standards of excellence is essential as the Navy enters a new transformational era. Creating and maintaining not just adequate facilities, but excellent sustainable facilities, is critical in cultivating a seamless transition to more efficient shore installations.

Planning and design are important elements in achieving installation and facility excellence. Decisions made during these phases often have long-term consequences—up to 50 years, or more. Therefore, it is essential that decisions made during this critical time ensure sensible and practical use of our environmental and fiscal resources. The Leadership in Energy and Environmental Design Green Building Rating System shall be a benchmark to develop sustainable facilities while considering long term life-cycle costs.

The quality of the physical environment directly affects the quality of life for military and civilian personnel, their families and visitors. So, it is imperative that installation and facility appearance demonstrate Navy pride, amplify a sense of ownership, and set a tone of communal culture. Quality work places are not solely driven by resourcing, but by human leadership intervention in maintaining uniform, high standards of appearance, safety, and functionality at our shore installations.

The NFEP sets the benchmark for improving and maintaining Navy facilities, providing personnel with an excellent environment in which to work, play and live.

  
Rear Admiral Christopher Weaver  
Commander, Navy Installations Command

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# INTRODUCTION

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*The CNI-Navy Facilities Excellence Plan (CNI-NFEP) is a set of guidelines that give general and specific criteria to be employed when developing and improving Navy installations. The guidelines also encourage a consistent approach to growth that will result in unified working and living environments that function in a manner consistent with the Navy mission. All projects, regardless of funding source, shall make use of these guidelines to the maximum extent possible.,*

*The CNI-NFEP is intended for use by Navy personnel who are responsible for facility planning, design, and maintenance at all levels, including the Regions, NAVFAC, FEC's, and Public Works Departments. Private sector A/E firms, when planning and designing Navy projects, should also become familiar with it.*

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One of the primary concepts of the NAV2030 Guiding Principles is maintaining or bettering the quality of life on Navy installations while maximizing their efficiencies—"Having the right Bases in the Right Places, and doing the Right Things at the Right Price". The CNI-NFEP is an overarching and dynamic guide that reflects this very idea, while focusing on CNI standards and guidelines for developing and improving all Navy installations. It offers general guidance on installation planning, construction, repair & maintenance and interior design. Organized to provide a broad range of cost- and environmentally-conscious suggestions, the CNI-NFEP strives to maintain consistent architectural themes, throughout various facility types, vital for installation and community development.

The guide integrates new and existing installation guidelines along with well-designed and well-executed examples of Navy facilities to provide a new consolidated vision for Navy installations. Individual, installation-specific appearance factors are addressed in Base Exterior Architecture Plans (BEAP) and Regional Shore Infrastructure Plans (RSIP). When used in conjunction with the CNI-NFEP, these plans can ensure the development of great facilities. This guide conveys the synergy necessary between these documents so that all installations can maintain an overall level of excellence, while remaining consistent and identifiable in their particular regions.

Though this guide remains constant in its ultimate goal, it is dynamic in nature and will be updated as needed to incorporate updated policies and guidance, as well as changes in technology and base priorities, as they change with leadership.

CNI-NFEP also addresses the operation and maintenance of Navy facilities. Along with timely and appropriate upgrades, quality maintenance will help extend the life of Navy installations and facilities, reduce the dependency on large scale repair and new military construction requirements, and reduce the overall fiscal burden.

The 21st century presents a number of challenges for the Navy. Among the most difficult to solve will be providing new facilities and maintaining existing ones needed to accomplish increasing mission responsibilities with declining resources. The CNI-NFEP creates the opportunity to exploit new technologies, encourage new ideas, and foster creativity consistent with our mission.



# PRIORITY GUIDANCE

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Recognizing that many guidelines found in the NFEP can be costly and require long-term planning, standards are separated into three tiers by order of priority.

**Tier 1:** Applies to daily routine and immediate safety issues; discrepancies that require immediate action. At a minimum, regions shall:

- ▶ Establish a formal policy that governs their plan to improve/maintain cleanliness and appearance. Appearance is a team effort and will include partnering with tenant commands to attain and sustain
- ▶ Require constant, diligent efforts to eliminate trash in common areas such as streets and sidewalks, parking lots, fence lines, and access gates. Specific deficiencies are found during daily drives; immediate corrective action should be expected.
- ▶ Improve/maintain landscaping to show pride of ownership. Invest in well-designed landscaping plans that enhance base entrances. Consider using a landscape architect when possible.
- ▶ Inspect sentry posts and sentries daily prior to assuming watch. The sentry post/gate access area and equipment shall be in good repair and properly stowed. Sharp, professional, and courteous sentries that use standard access procedures are baselines.
- ▶ Signage, lighting and pavement striping should not be faded, defaced, or inaccurate. These are safety issues and should garner priority in BOS/SRM allocations. Roving nightly security can identify burned out street lights and other lighting deficiencies.
- ▶ Create a robust Bachelor / Family Housing inspection policy that includes exterior common areas. Tenant commands must also be included.
- ▶ Maintain perimeter fencing in good condition.
- ▶ Maintain common grounds, roads, and sidewalks by eliminating potholes, debris, and by sustaining grounds appearance.
- ▶ Piers and flight lines directly support the Navy's mission and deserve special attention. Maintain to the highest standards with respect to clutter, maintenance, safety, and cleanliness.

**Tier 2:** Discrepancies can be solved with limited SRM/BOS or personnel resources.

**Tier 3:** Consists of issues that require longer term resourcing or require external funding support.

# GENERAL FACILITY GUIDELINES

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***Efficiency, visual appeal, comfort, and cost-efficient maintenance should be key concepts for installation design.***

Navy facilities should reflect the highest professional standards of planning, design, construction, operation, and maintenance. All facilities, regardless of their use, must be efficient, safe, and comfortable places for people to work and/or live. New construction and renovation designs should incorporate low-maintenance or integrally colored materials and economical construction techniques without compromising a high quality, architecturally pleasing, professional appearance.

Funding constraints can make attaining these goals challenging, however, it is a challenge that must be met to assure a facility's functionality nor appearance is compromised.



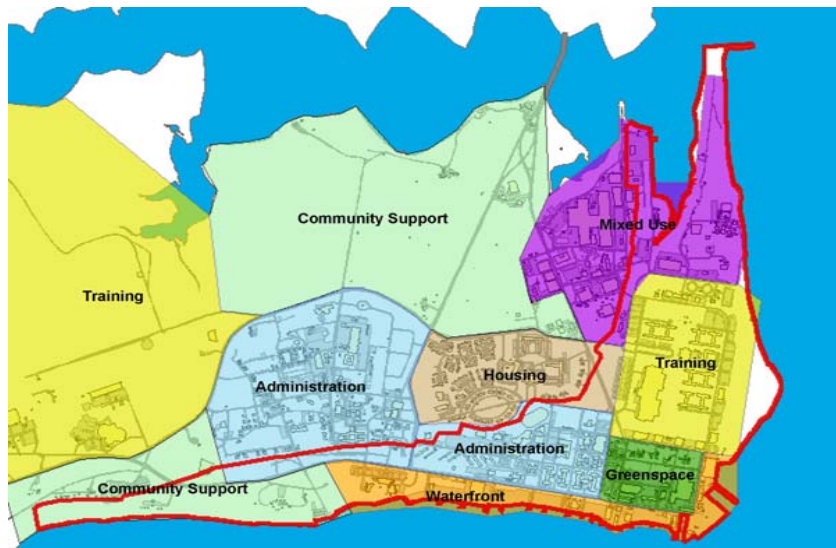
## **Each installation should strive to:**

- ▶ Promote sound planning and urban design concepts.
- ▶ Provide generous landscaping and open space, while optimizing scenic vistas.
- ▶ Improve the efficiency and appearance of base vehicle and pedestrian circulation networks.
- ▶ Consider the appearance of proposed new facilities from various perspectives and within the context of existing facilities.
- ▶ Enhance the appearance of base and fence lines through attractive entry features, landscaping and signage.
- ▶ Integrate and apply the latest force protection standards and LEED Sustainable Development principles early in the design process.
- ▶ Perform life cycle cost analysis for HVAC systems, lighting, and windows, at a minimum, on every new facility.

# LAND USE PLANNING

***Even established installations need to actively pursue future compatibility and synergistic savings gained from recapitalizing under an effective Land Use Plan.***

Navy installations have traditionally met new mission requirements by recapitalizing existing facilities or constructing new facilities wherever space was available. Although this often led to the least expensive short-term solution, it did not account for the very real cost of incompatible use and loss of synergy over the long-term life cycle of the installation. Over time this has led to an inefficient installation layout with real costs due to workforce lost time, necessary additional installation shuttle services and support vehicles, increased utility charges and longer line runs, and, increased street and parking lot construction and maintenance.



## Alignment

- Align land use by function with complementary and support functions adjacent to primary mission functions.
- Mixed Use Zoning acceptable if facility functions provide direct support to the primary zone function.
- Optimize/minimize the need for routine flow between zones.

## Compatibility

- Improved land use compatibility directly reduces required facility footprint and duplication of support facilities.
- Maximizes workforce efficiency by minimizing workflow nodes.
- Allows support functions to more effectively support core missions with fewer required overhead resources.

## Link to Recapitalization

- Consolidate like functions in designated land use areas.
- Maximize adaptive re-use of facilities to land use plan in lieu of new construction and new footprint.
- Enforce compatible adjacent land uses to avoid undesirable effects of noise, traffic or limitations on future potential.
- Preserve green space between facilities within a zone and between zones.





# SITE AND LANDSCAPE DESIGN

***Spaces between buildings physically and visually link an installation and deserve as much attention as the surrounding buildings.***

Well-designed vehicular, pedestrian & bicyclist circulation, street & building lighting, and site furnishings give a unified, professional look and provide a pleasant environment. Using Navy installation standards will ensure the continuation of chosen design concepts over time.



## Circulation

- ▶ Improve overall circulation patterns.
- ▶ Provide outdoor spaces that are protected from the sun, rain, and wind.
- ▶ Plan and maintain walkways and bikeways to help reduce dependence on private automobiles within the installation.

## Walkways

- ▶ Create a pleasant, pedestrian-scaled environment.
- ▶ Avoid designing walkway systems as just a border to roadways. They should be used as an alternative circulation system.
- ▶ Facilitate movement and access to facilities by disabled users.
- ▶ Clearly mark pedestrian crossings using distinct visual markers.

## Lighting

- ▶ Use lighting to convey a sense of organization throughout the installation.
- ▶ Choose lighting fixtures that maximize energy efficiency and minimize repair costs.
- ▶ Use low-impact lighting to reduce light pollution.
- ▶ Light walkways located away from streets to increase safety.

## Parking

- ▶ When necessary, provide dedicated employee parking and limit reserved spaces.
- ▶ Minimize the apparent size of large parking areas with landscaping and berming.

## Site Furniture

- ▶ Provide comfortable benches or seat-walls near building entrances and in courtyards.
- ▶ Locate litter receptacles and planters near paved sites where they are clear of circulation paths. They should be consistent and match other outdoor furniture.
- ▶ Set bollards in paving or in sleeves to allow access. Bollards should be used to enhance pedestrian protection and to provide vehicle control per AT/FP requirements.





# BASE ENTRANCES

*First impressions are often lasting impressions.*

Gates, guardhouses and visitor centers are key opportunities for demonstrating pride in Navy installations. Though security levels and needs vary at each installation, it is important to create an attractive and welcoming appearance. Doing this, while ensuring safety and security, requires innovative solutions.



## Entrance Corridor

- ▶ Maintain roadside areas leading to and into the installation.
- ▶ Work with local agencies to ensure adequate signage leading visitors to the installation. Identify the installation name at each gateway.

## Front Gate

- ▶ Employ landscaping that enhances the visual appeal of the entry, but does not compromise security sight lines.
- ▶ Provide appropriate stacking lanes and large vehicle pull-off areas.
- ▶ Integrate AT/FP features into the design of gateways and avoid security features (such as blocks and gates) that lack a permanent look.
- ▶ Provide pedestrian and bicycle-friendly access.



## Guardhouse

- ▶ Site guardhouses appropriately (on an island between opposing lanes of traffic) and provide access to traffic lanes in both directions.
- ▶ Strive for architectural compatibility with nearby buildings, including the visitor center. Guardhouses should be permanent structures with appropriate amenities, including weather protection and HVAC for assigned personnel.

## Visitor's Center

- ▶ Locate visitor centers close to the gate guardhouse.
- ▶ Provide traffic circulation routes that allow visitor traffic to be easily directed from the guardhouse to the visitor's center.
- ▶ Provide center staff with resources to help orient visitors to the installation.

## Displays and Signage

- ▶ Develop signage and landscaping treatments to designate the primary route from the entrance to key destinations (headquarters, billeting, and clubs) around the base.
- ▶ Identify the installation and major commands with modest, visible signage.

# SITE SIGNAGE



***Effective signage communicates information quickly, understandably and attractively.***

Signs should guide residents and visitors and enhance traffic safety. Beyond these important functions, signs should be attractive and should harmonize with the installation surroundings. They should be a positive aspect of an installation's overall image.

## Style and Consistency

The size, shape, color and material of installation signage should be consistent so the viewer can develop an association between the position of the sign and the type of information provided.

## Directional Signage

- ▶ Use signage to convey a sense of installation organization.
- ▶ Display only pertinent information.

## Visual Clutter

- ▶ Condense information to minimize the number of signs. Standardize terms so they are familiar and consistent.
- ▶ Reduce clutter by eliminating excessive graphics and outdated information.
- ▶ Use signage systems that can accommodate change.
- ▶ Prohibit temporary signs or notices on fences, buildings, doors, walls and windows.



## Facility Signage

- ▶ Limit signs to function identification and ensure that they are easily read from the street.
- ▶ Avoid miscellaneous emblems, logos, and direct-paint applications.
- ▶ Standardize building address sign size and placement on each facility on the installation.
- ▶ Use raised letters on buildings. They are preferred to freestanding signs for visibility and ease of maintenance.

## Special Signage

- ▶ Limit unique signs to prominent locations.
- ▶ Use electronic signs judiciously. While preferable over temporary signage, they can quickly become visual clutter or cause maintenance problems.



# BUILDING EXTERIOR

***A consistent design theme and attractive buildings contribute to a sense of base pride while providing an excellent work and living environment.***

The CNI-NFEP should be used to maintain consistency in buildings and neighborhoods, as facilities are constructed and modified. By establishing standards, cohesive and architecturally pleasing facilities are created, while a professional image is maintained throughout the installation. All Navy Installations should specifically address local architectural details through their own planning and design objectives.

## General Design Guidelines

- ▶ Integrate with and relate new facilities to neighboring buildings for compatibility. Promote building design that responds to the local climate and regional influences.
- ▶ Use architectural details to break up extremely large structures and avoid long continuous facades.
- ▶ Emphasize the main entrance of facilities.
- ▶ Avoid sacrificing architectural details and landscaping as cost saving measures on new projects.



## Temporary Facilities

- ▶ Demolish unusable buildings.
- ▶ Avoid using temporary buildings, metal sheds and trailers.

## Exterior Materials

- ▶ Incorporate design materials that are durable and require little maintenance. Also, ensure materials are environmentally friendly.
- ▶ Select basic building materials that are compatible with the local climate and immediate architectural context.
- ▶ Refer to installation color palette to determine appropriate colors that support and reinforce an installation's determined style.

## Landscaping

- ▶ Require all construction and renovation projects to incorporate a landscaping plan.
- ▶ Enhance architecture with well conceived landscaping that helps visually organize a group of buildings.
- ▶ Incorporate landscaping that increases energy conservation by reducing glare and providing shade.



# BUILDING INTERIOR

***Most shore side personnel spend the majority of their working lives indoors.***



All elements of the indoor environment (air and light quality, workstation ergonomics, finish materials, furnishings, and maintenance) contribute to personnel comfort, safety, productivity and morale. It is critical that careful consideration be given to each of these elements throughout the lifecycle of each facility.

## **General Guidelines**

- ▶ Use interior design professionals to assist in developing comprehensive interior design schemes for all facilities.
- ▶ For facilities housing more than one functional component, provide a definitive boundary between operational zones, e.g., shop areas and administrative areas, to keep functions separate.
- ▶ Ensure that all facilities comply with accessibility guidelines as defined by the Americans with Disabilities Act (ADA) when applicable.

## **Finishes**

- ▶ Use materials that are durable, cost-effective and environmentally friendly. They should also be appropriate for the function and the usage of the space.
- ▶ Recess wall-mounted fixtures such as fire extinguishers, fountains, emergency lights and restroom accessories where possible.
- ▶ Use a palette of neutral colors for permanent finishes and accent colored accessory furniture for visual appeal.
- ▶ All furniture should be coordinated and reflect a professional image.

## **Communication and Power**

- ▶ Provide adequate connections for each use, especially wired panel systems.
- ▶ Conceal all connections, cables and conduit.

## **Mechanical Rooms**

- ▶ Keep areas clean and avoid using them for storage.
- ▶ Mark all piping and utility systems according to code and industry standards.





# PAVEMENTS

*Paved areas provide a smooth passage for vehicles and pedestrians and also visually link the installation's most traveled areas.*

Appropriate paving materials facilitate movement and enhance safety. Timely maintenance and repair of paved areas ensures functionality and safety for work and living areas.

## General Paving

- ▶ Use asphalt paving for most vehicle parking areas, and concrete for sidewalks and curbs.
- ▶ Consider special unit pavers for courtyards, plazas, entrances, and other high-profile sites.
- ▶ Provide a landscaped buffer between buildings and paved areas where space permits.
- ▶ Use a change in paving materials to distinguish pedestrian and vehicular circulation areas or to mark a pedestrian crosswalk in high traffic areas.

## Streets

- ▶ Streets should promote traffic flow, and direct vehicles to various destinations. Assure proper markings for safe and efficient circulation.
- ▶ Where possible, provide sidewalks on at least one side of every street and between facilities where there is frequent pedestrian traffic.



## Curbs

- ▶ Curbs increase the life span of streets and parking lots. They should be used to prevent erosion and reduce the need for extensive repairs by minimizing stresses on pavement edges.
- ▶ Curb all streets except remote roads, perimeter utility roads, and dirt or gravel roads. Avoid utility or other cuts in pavement.
- ▶ Minimize painted curbs, as they are difficult to maintain.
- ▶ Ensure handicapped access is provided at intersections and crosswalks.

## Parking Areas

- ▶ Curb all parking lots and avoid using wheel stops/bumper blocks.
- ▶ Design off-street parking with 90-degree spaces and two-way circulation aisles, wherever possible.
- ▶ Use drop-off areas at high-use facilities to decrease close-in parking.
- ▶ Provide AT/FP setbacks from high occupancy buildings.

# SCREENING HEDGES AND FENCES

*Screening hedges and fences direct attention and movement.*

Screening hedges and fences highlight attractive elements of an installation by redirecting focus away from dumpsters, utilities and parking lots. Security fencing prohibits entry into certain areas and can serve as a visual separation between facilities. Screening hedges and security fencing should be functional as well as attractive and consistent with installation specific guidelines.



## Landscape Screens

- ▶ Use landscaping and/or landscaped berms as attractive, cost-effective methods for screening unattractive areas of a facility, such as utilities and trash dumpsters, from high traffic areas.
- ▶ Create screening that is the height of equipment to be screened.

## Fencing

- ▶ Install perimeter fences with decorative metal, concrete, masonry, chain link or a combination thereof. Use a material compatible with the local climate to minimize maintenance costs.
- ▶ Avoid excessive use of general fencing.
- ▶ Consider alternatives to chain link and/or barbed wire fencing in high visibility, high security locations, when possible.
- ▶ Use plastic lumber that does not splinter or require painting in housing and recreational areas.
- ▶ Consult installation-specific guidelines for fence design parameters.

## Walls

- ▶ Control the visual impact of enclosures and long sections of walls. Combine landscaping to soften wall faces.
- ▶ Use materials that are compatible with neighboring buildings' finish material.
- ▶ Keep wall screening at a human scale where possible.

## Parking Lots

- ▶ Screen parking lots with walls, berms, or mature landscaping.
- ▶ Maximize the use of islands, lighting, sidewalks, trees, and plantings in parking lots.





# PLANTS AND GROUND COVER



***Using appropriate local and native plants is an easy, low cost way to improve installation appearance and to unify various activities.***

The consistent use of tree species and landscape plants along major thoroughfares can produce an overall visual theme. Landscaping can also improve environmental quality on an installation by shading buildings, absorbing and deadening noise, reducing glare, and preventing soil erosion.

## Landscaping Plan

- ▶ Require landscaping for all new facilities and include irrigation systems when necessary; consider using landscaping that requires minimal watering.
- ▶ Consider force protection issues when developing landscape designs.

## Maintenance and Care

- ▶ Provide regular watering, feeding and pruning to ensure the health and growth of all plant materials. Preserve and/or revitalize existing landscaping when required.
- ▶ Consider possible effects of any landscape plan on the maintenance plan.
- ▶ Use trees instead of shrubs whenever possible for maximum effectiveness with the lowest possible maintenance.
- ▶ Limit turf areas, edge them and keep them free of obstructions to facilitate mowing.



## Sustainable Landscaping

- ▶ Use plants that are native, drought-resistant, low-maintenance and pest-resistant.
- ▶ Incorporate water-efficient practices such as using mulches, efficient irrigation systems and reclaimed water.
- ▶ To reduce pesticide use, consider alternative methods that will help prevent weed growth.

# HISTORIC PRESERVATION

*Historic buildings are generally thought of as buildings with cultural and architectural significance.*



Facilities that housed historic events or were involved in a historic event can be designated as historic buildings. Facilities that have historic or notable significance should be preserved for future generations when structurally sound and cost-effective to repair and maintain. Identify historic properties installation-wide and consider them in planning processes.

## **Renovation of Historically Significant Facilities**

- ▶ Determine how the historic facility could best be used for current installation needs.
- ▶ Coordinate with the State Historic Preservation Office (SHPO), or similar entity overseas, to ensure that historic facilities are maintained and restored in the appropriate context. Also determine if local funds are available to minimize project costs.
- ▶ Preserve the original appearance of the building as much as possible.
- ▶ Maintain similar architectural elements such as materials and detailing, while not compromising the functional purpose they serve.
- ▶ Develop a file to document existing and altered conditions. Include a site map, original as-built drawings and/or microfilm, photographs of the building prior to renovation, and documentation of the renovation task.



# ENVIRONMENTAL STEWARDSHIP

*Preserving today's valuable resources will protect our environment and help promote a healthy future.*

Striving to restore and protect our natural resources is important in today's environmental climate. Planners and designers should seek creative opportunities to address environmental, human health and safety, and energy efficiency concerns—collectively called Sustainable Development. Sustainable Development concepts and principles, when incorporated in the design, construction and post-occupancy phases of facilities, can lead to a significant reduction in life-cycle costs. Facility design and installation planning should be consistent with the Leadership in Energy and Environmental Design (LEED) Green Building Rating System for a comprehensive measure of sustainable design elements.

## Siting

- ▶ Preserve the existing environment's natural resources such as steep grades, wetlands, streams, and unique landscape features.
- ▶ Rehabilitate environmentally contaminated sites to reduce destroying undeveloped land.
- ▶ Select sites and orient facilities to maximize day lighting, vistas, and minimize life cycle/energy costs.

## Building Systems

- ▶ Establish a minimum level of energy efficiency to maximize energy performance for all facilities.
- ▶ Consider using alternative energy sources for electricity and heating.
- ▶ Implement fundamental TABS and commissioning procedures.
- ▶ Minimize the impact of noise from mechanical, plumbing, and electrical systems.
- ▶ Establish minimum indoor air quality standards for all new facilities.

## Building Materials

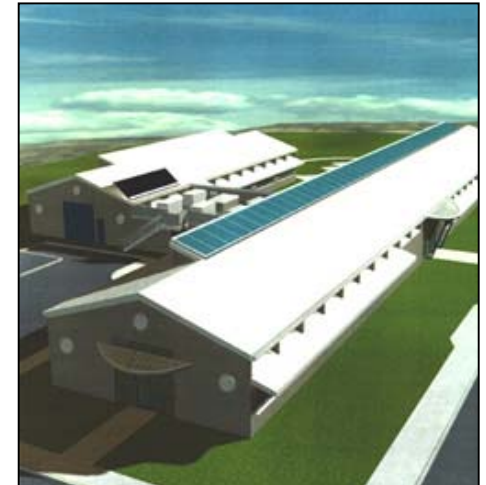
- ▶ Ensure most, if not all, exterior building materials are energy efficient; minimize heat absorption by selecting lighter material colors.
- ▶ Use materials that are produced locally wherever feasible.

## Alternative Transportation

- ▶ De-emphasize vehicular orientation and parking capacity and increase pedestrian and bicycle access when practical.
- ▶ Promote using vehicles with alternative fuel sources and public transportation.
- ▶ Provide secure and convenient bicycle storage at or near installation destinations.

## Recycling

- ▶ Provide dedicated space for recycling containers in all facilities.
- ▶ Recycle construction and demolition materials, when feasible.
- ▶ Use new materials with recycled content whenever appropriate.





# ANTI-TERRORISM/FORCE PROTECTION

*Personnel protection is paramount to the success of our nation's military.*

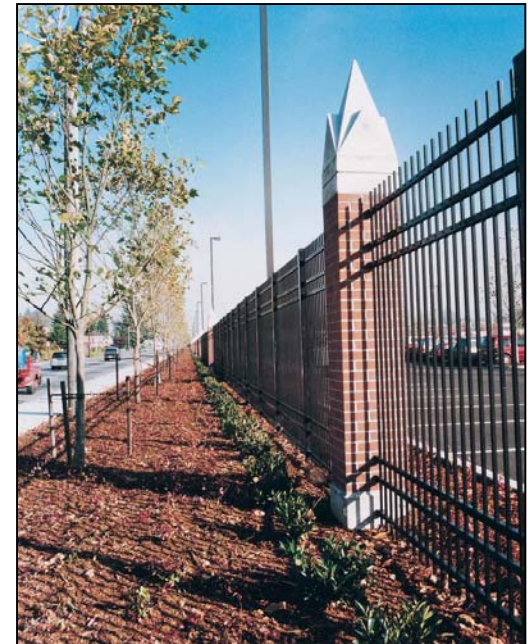
Facility design and construction strategies should be used to protect personnel and key facilities. The most current NAVFAC construction standards must be used in the design of new facilities and in major renovations of existing facilities. Anti-terrorism/force protection measures should be consistent and integrated with the CNI-NFEP.

## Facility Siting and Design

- ▶ Use appropriate standoff distances for new projects. For existing facilities use heavy planter boxes or deeply rooted bollards to realign access and create standoff distances.
- ▶ Maintain clear zones outside the installation perimeter where practical.
- ▶ Maximize distance from facilities to installation boundaries.
- ▶ Minimize vehicular access points.
- ▶ Provide physical barriers at entrance gates, such as pop-up barricades or a serpentine entrances.
- ▶ Provide an entrance gate for trucks and independent commercial vehicles separate from the main gate, if possible.
- ▶ Optimize the use of closed-circuit cameras at gates and critical facilities.
- ▶ Illuminate building exteriors or sites where exposed assets are located.

## Fencing

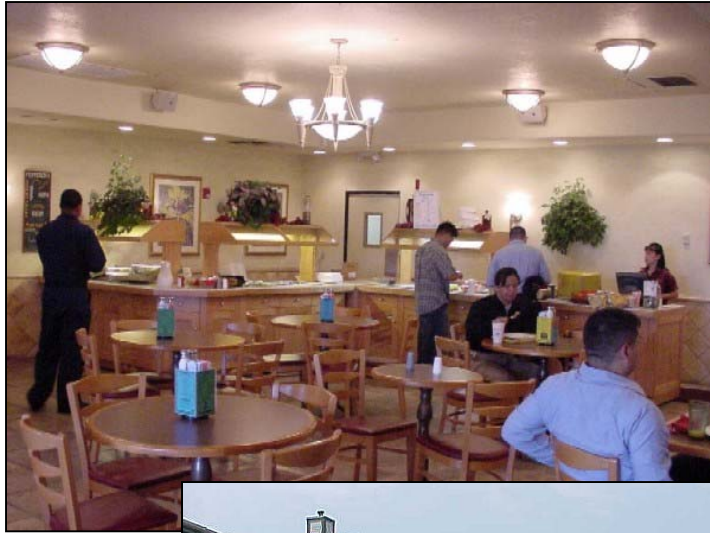
Use a standard palette of design elements, such as bollards or berms, that is consistent and compatible with other site systems. Elements promoting force protections should be an integral and attractive part of the landscape.



# QUALITY OF SERVICE

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***“Quality of Service is the key to mission accomplishment.”  
–Admiral Vern Clark, Chief of Naval Operations***



The Navy definition of Quality of Service equates to the balance of one's quality of life with their quality of work. All facilities on an installation are a part of military and civilian personnel and their families' Quality of Service, including the places they work, live, and spend leisure time. First-rate Quality of Service facilities are vital to retaining quality personnel and enhancing productivity. The increase in morale and the sense of ownership further motivates people to contribute to installation maintenance and improvement.

Maintaining superior Quality of Service facilities are a top priority in mission and combat readiness.

# QUALITY OF WORK FACILITIES

*Quality of work includes having a work environment that contributes to personal and professional growth.*



Excellence in Quality of Work facilities can translate to increased efficiency, safety and productivity. For example, a properly covered storage area will help maintenance supplies last longer, if kept outside. A well-ventilated painting area can properly handle toxic fumes. Properly insulated facilities provide the sound and climate controls necessary for highly productive work. Safety is improved and appearance is enhanced by keeping areas free of unneeded materials and clutter.

Improving workspaces can range from simply cleaning and organizing existing workspaces to completely replacing a facility with a well-designed alternative. Review existing maintenance needs and quality of service projects for improvement opportunities. Maintaining a vision of excellence will incrementally elevate the work environment ashore no matter what the size of the project.







# WATERFRONT FACILITIES

*A Sailor's first impression of a base is most often from the water.*

Waterfront facilities should be designed to be functional and visually appealing from both land and water. Maintenance improvements combined with a vision for emerging material handling and pier design technologies will ensure that waterfronts function at the highest level of efficiency.

## General Pier Features

- ▶ Plan and design spacious, well-organized piers and wharves capable of providing efficient personnel access, material/supply movement, and utility connectivity.
- ▶ Locate support facilities such as mini-marts, laundries, and eating establishments within walking distance to piers and wharves when possible respecting limitations such as explosive arcs.

## Pier Design

- ▶ Design utilities and IT connections under the pier and channel through hoods and conduits.
- ▶ Design either pier or fendering systems to handle either ships or submarines for maximum flexibility.
- ▶ Plan pier design for future expansion and growth i.e., double-deck piers.



## Management

- ▶ Reduce clutter by determining which items must be stored on the pier and removing items that can be stored elsewhere.
- ▶ Provide covered storage in proximity to the waterfront operations maintenance support facilities.
- ▶ Material handling is key to increased efficiency. If practical, provide conveyor systems for ship loading and offloading.
- ▶ Provide well marked, but screened areas for dumpsters and recycling containers.
- ▶ Provide quality berthing and maintenance buildings for small boats that support fleet operations.

## Safety/Force Protection

- ▶ Illuminate the waterfront area for around-the-clock safety and security.
- ▶ Establish security points at strategic locations throughout the harbor.
- ▶ Provide a covered and adequately sized facilities for security/bag checkpoints on the pier.

# AIRFIELD FACILITIES

**Air crews require quality facilities to preserve maximum production efficiencies and a safe working environment.**



Personnel must be protected from noise, vibration, fire, and extreme weather changes through facility design. Ongoing maintenance of airfield facilities requires established guidelines and diligent effort. Quality facilities and their upkeep are crucial to keeping the state-of-the-art, highly sophisticated aircraft and their associated personnel ready and mobile.

## General

- ▶ Maintain spacious and well-lit working areas.
- ▶ Optimize climate control systems to meet mission requirements.
- ▶ Provide modern, professional squadron administrative areas.
- ▶ Strive to collocate staging areas and maintenance facilities at operational sites in close proximity of aircraft.

## Support Facilities

- ▶ Locate maintenance and storage buildings in proximity to flight lines and hangars.
- ▶ Soundproof and air-condition control towers and other buildings near the runway.
- ▶ Install overhead cranes within shop areas.
- ▶ Use insulated hangar doors to conserve energy.
- ▶ Protect personnel and equipment from the elements when possible. Shelters with lighting and power on flight lines reduce aircraft movement and perform maintenance.

## Runway

- ▶ Keep airfield pavement well maintained and free of debris.
- ▶ Investigate technologies for pavement materials and sealants to extend runway life.
- ▶ Ensure that lighting and supporting electrical systems are highly reliable.
- ▶ Eliminate portable buildings on parking aprons.





# ADMINISTRATION FACILITIES

*A comfortable and ergonomic environment fosters high productivity and efficiency.*

Administration facilities generally contain offices, conference rooms, and command center settings. Well-designed space and furniture configurations, plus accessible temperature and lighting control mechanisms, not only raise morale and productivity, they can reduce operating costs. Reference the installation-specific design criteria for additional guidelines on finishes, fixtures and other elements.

## Building Siting

- ▶ Emphasize visibility of the site and maintain a visual relationship to neighboring facilities.
- ▶ Locate administration facilities near the boundary of the live/work zones of the installation.
- ▶ Avoid allowing buildings and site to become monumental complexes that disregard human scale.

## Interiors

- ▶ Provide efficient HVAC systems.
- ▶ Keep partitions low and limit full-height walls to encourage efficient air movement.
- ▶ Incorporate natural and task lighting to minimize energy use and positively affect the physical and mental health of all personnel.
- ▶ Utilize motion detectors with lighting systems to minimize unnecessary energy consumption.
- ▶ Use recessed or indirect lighting to add warmth and contrast to conference areas, corridors and offices.
- ▶ Plan space for break areas to include refrigerators and microwaves as well as storage areas for support equipment, such as copiers and faxes.

## Office Layout

- ▶ Use office systems with modular furniture and panel walls, whenever possible, to meet with the ergonomic demands of people working with computers.
- ▶ Provide access to exterior walls and windows when feasible.
- ▶ Provide sufficient waiting room space.
- ▶ Provide sufficient file storage to reduce cubicle clutter.

## Accessories

- ▶ Frame all artwork, pictures and posters. Avoid taping or tacking items to anything other than bulletin boards.
- ▶ Use matching and compatible furniture throughout a facility.
- ▶ Locate vending machines in lounges and near waiting areas, but not in entry areas.
- ▶ Use plants to enliven workspaces.
- ▶ Prohibit the use of personal heaters and refrigerators to reduce energy costs.





# TRAINING FACILITIES

*Training facilities are often a new recruit's first impression of Navy life.*

Training facilities must be modern, efficient, clean and fully capable of providing the necessary training required by today's Sailor.

## Applied Instruction

- ▶ Design building spaces to accommodate future advances in simulators and equipment design.
- ▶ Provide briefing and evaluation support spaces adjacent to the trainers.
- ▶ Locate specialized hands-on training areas adjacent to work areas where appropriate.
- ▶ Incorporate adequate power and communications infrastructure to support training missions.
- ▶ Provide convenient locker and shower facilities.



## Classroom Facilities

- ▶ Build flexibility into classroom spaces to increase their usefulness and value.
- ▶ Equip rooms for multi-media presentations and the latest in telecommunications technologies as these technologies can increase training availability and decrease travel time.

# ORDNANCE FACILITIES

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*Safe and efficient ordnance handling is promoted by a well-designed ordnance compound.*



## **General Criteria**

- ▶ Design facilities for the most current inventory of weapons.
- ▶ Provide appropriate weight-handling equipment for type of ordnance handled.
- ▶ Provide covered weapons assembly areas.
- ▶ Use reliable lighting and ventilation systems
- ▶ Provide open spans in storage areas to optimize storage capacity.
- ▶ Provide effective storage areas to reduce clutter in assembly areas.
- ▶ Install large doors that operate easily and accommodate moving equipment.
- ▶ Provide loading docks configured for current weapon handling equipment.
- ▶ Provide roads, signage and pavement areas that allow for safe vehicle operation, avoid damage or delay in moving ordnance

## **Consider emerging technologies including:**

- ▶ the use of water filled-barriers to absorb blast effects.
- ▶ interior-wall magazines that reduce sympathetic explosions and thereby reduce ESQD arcs.
- ▶ structural concrete with less wave coupling and reduced energetic spill fragments.

# MAINTENANCE FACILITIES

*Service to the Fleet depends on efficient maintenance operations.*

Maintenance facilities must provide personnel with sufficient, well-organized workspace to maintain equipment for ships, aircraft, weapons systems and electronics, and to protect critical high-value equipment from damage by the elements. These interior spaces should be designed for flexibility to meet changing needs.

## Guidelines

- ▶ Co-locate storage areas, shops, and administration spaces.
- ▶ Provide adequate storage areas.
- ▶ Practice good housekeeping to maintain orderly and efficient operations.
- ▶ Ensure facilities are well lit with overall and task lighting. Incorporate natural lighting to minimize energy use.
- ▶ Confirm that electrical and mechanical capacity is sufficient for varied industrial methods.
- ▶ Organize the maintenance area for easy collection and storage of hazardous materials.



## Safety Features

- ▶ Ensure that safety equipment is clearly marked and in good operating condition.
- ▶ Provide adequate sinks, showers and locker rooms for personnel safety and “end of shift” cleaning.
- ▶ Install weight-handling equipment in heavy maintenance areas. Provide overhead cranes as appropriate.
- ▶ Locate painting operations in structures with temperature control, weather protection, ventilation, and lighting.



# SUPPLY/WAREHOUSE FACILITIES

**Supply facilities must balance the need to maintain inventory levels against the costs of storage.**

A well thought out design facilitates quick access and delivery of supplies. Interior space flexibility and an effective communication system can contribute to an effective supply system.

- ▶ Design buildings with modern storage features such as high-stacking shelves and wide aisles to accommodate material handling equipment and pedestrian traffic.
- ▶ Layout shelving early in design process to avoid conflicts with structural, lighting, and mechanical systems.
- ▶ Consolidate smaller substandard storage areas for more cost-effective management. Assess which storage areas need to remain near maintenance shops and which would benefit from consolidation efficiencies.
- ▶ Maintain buildings to prevent inventory damage.
- ▶ Provide climate controls as needed to maintain the useful life of the inventory.
- ▶ Where practical, collocate all material-handling equipment, operations and maintenance functions inside warehouses.
- ▶ Position all truck ramps and platforms for optimal loading and unloading.
- ▶ Provide sufficient space in warehouse facilities to prevent storage in outside areas.
- ▶ Protect items that must be stored outside.
- ▶ Encourage the use of effective supply chain management to minimize material storage.
- ▶ Discard items that are not used regularly to make room for critical items.
- ▶ Encourage using bar coding and radio frequency identification for inventory control and movement tracking.



# POL FACILITIES

***Well- designed and maintained petroleum, oil and lubricant (POL) storage facilities ensure efficient and environmentally safe delivery of POL products.***

- ▶ Keep tanks and piping well maintained and painted.
- ▶ Maintain vegetation on bermed areas to prevent erosion.
- ▶ Use cathodic protection for buried fuel tanks and piping to prevent corrosion.
- ▶ Lay out fuel tank farms in an efficient manner with well-signed roadways and truck loading and unloading areas.
- ▶ Clearly mark piping, valves and tanks to increase operational efficiency and reduce safety hazards.
- ▶ Ensure that safety equipment and emergency systems are clearly marked and in operational condition.
- ▶ Locate testing and sampling facilities in safe proximity to fuel tanks.



# QUALITY OF LIFE FACILITIES

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*Housing, dining, clubs, and community, religious, recreational, and health care facilities are important to the quality of life for our personnel.*



Attractive housing and appealing community facilities are important in providing today's Sailors with a highly positive experience whether they are stationed ashore or only visiting briefly. The Navy has placed great emphasis on improving bachelor and family housing and support facilities in an effort to retain quality personnel. The results of these efforts indicate continued progress toward excellence and will have an enduring effect on the installation and the entire Fleet.





# FAMILY HOUSING

***The Navy housing's mission is to provide quality housing and services to our personnel and their dependents, enhance morale and Sailor retention, and support the operational readiness of the Navy.***

Housing is one of the most important Quality of Life factors influencing our Sailors and their families. With that, there are significant implications on mission accomplishment, morale, and productivity. Job performance and retention are directly impacted if housing is substandard.

## Siting Design

- ▶ Design attractive neighborhoods with functional and convenient common-use facilities to encourage interaction and instill a sense of belonging. Encourage the development of parks, paths, and playgrounds, comparable to well-designed off-base housing areas.
- ▶ Diminish the importance of the automobile, facilitate pedestrian circulation and site housing developments near base amenities.
- ▶ Develop neighborhoods to minimize energy and water consumption and associated cost of ownership.

## Unit Design

- ▶ Enhance family interactions through attractive and logically arranged living, eating and sleeping spaces.
- ▶ Orient units to optimize solar exposure and control
- ▶ Use durable, low-maintenance materials, finishes, equipment and appliances to conserve energy, increase comfort, improve health and reduce life cycle costs

## Maintenance Programs

- ▶ Use data provided from Condition Assessment Program (CAP) and Resident Satisfaction Survey (RSS) to continually improve maintenance & planning, and services.

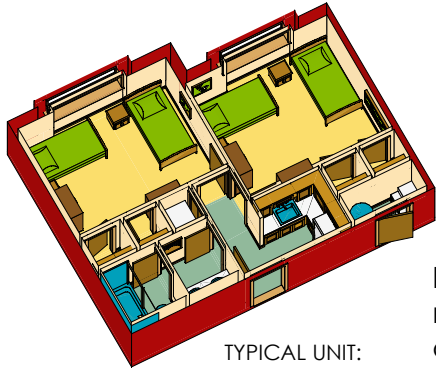
## Public/Private Ventures

- ▶ To eliminate the backlog of our inadequate housing, most Navy housing in U.S. and territories will be privatized by the end of FY07.



# BACHELOR HOUSING

***The Navy housing's mission is to provide quality housing and services to our personnel and their dependents, enhance morale and Sailor retention, and support the operational readiness of the Navy.***



TYPICAL UNIT:  
EXPANDED 1+1

In the past, housing has been provided to shore-based Sailors, but recent efforts have been made to provide every Sailor with more privacy and a greater amount of personal living space ashore to improve Job performance and retention. The Navy standard for bachelor housing is known as the Expanded 1+1, in which two occupants share one living module.

## Bachelor Housing Siting and Design

- ▶ Cluster new bachelor housing near existing bachelor housing and within walking distance of work areas and community support facilities (galley, club, fitness center, etc.)
- ▶ Create a pedestrian friendly environment within the housing and community support area with accessible public spaces and recreation areas.
- ▶ Use sustainable commercial standards for construction and renovation projects to improve quality and reduce cost of ownership



## Finishes and Furnishings

- ▶ Make rooms inviting with indirect lighting, vanity sinks, hardwood furniture, and coordinated colors for all furnishings and finishes
- ▶ Carpet rooms and interior hallways
- ▶ Use durable, low-maintenance materials, finishes, equipment and appliances to conserve energy, increase comfort, improve health and reduce life cycle costs
- ▶ Provide a washer/dryer unit in each module

## Public/Private Ventures

- ▶ PPV projects are being developed to help eliminate the Bachelor Housing deficit
- ▶ First Pilot project is targeted for award in FY06

# VISITOR'S QUARTERS

***The Navy's lodging mission is to provide quality and consistent, cost effective lodging services to official government travelers.***

The Visitors Quarters is a category A program that serves the mobile community. The basic funding source for this program is Appropriated Funds and the operational revenue generated is from the travel and training funds provided to all commands. Its primary objectives is to maintain the cost of lodging services to a minimum



## Basic Services

- ▶ Private room and bath with amenities such as coffee pot, microwave and micro fridge, expendable amenities such as shampoo, soap and other travel items
- ▶ Room are equip with basic cable with at least one premium channel, telephone line with data line for computer links
- ▶ Furniture, Fixtures and Equipment (FF&E) are replaced at the same time in a room under what we know as the “Whole room Concept” the idea is to maintain the FF&E serviceable and looking like new



## Program Objectives

- ▶ Maintain a professional work force
- ▶ Maintain a continuous Improvement in operational processes to keep up with the traveler community needs
- ▶ Develop ways to maximize efficiencies through partnership with other programs such as MWR
- ▶ Implement a new generation of property management system that allows the property availability in real time and via the internet.



## Vision

- ▶ Navy VQ will be the preferred choice of official government travelers



# COMMUNITY SUPPORT & RECREATIONAL FACILITIES

***Well-equipped and convenient community support and recreational facilities can greatly enhance the quality of life for Navy personnel and their dependents.***

Having exceptional places to dine, worship, learn, shop, recreate, and receive health care raise morale and satisfaction. These facilities, used by military and civilian personnel create a lasting impression of pride and are the core of the installation. In general, these facilities serve a variety of user groups and therefore must be flexible, low maintenance, multi-purpose in design and function, and offer attractive, customer-contact areas.



## **Recreation and Fitness Facilities**

- ▶ These facilities should be designed to enhance overall readiness and retention and to support quality of life for Navy personnel and their families.
- ▶ Provide convenient access to outdoor recreation including jogging/hiking trails linking the fitness center with the nearby housing and dormitory facilities and work centers.
- ▶ Provide open spaces to buffer developed zones and provide additional recreational opportunity.



## **Dining and Shopping Facilities**

- ▶ Create dining and club facilities that are comparable to commercial facilities and restaurants.
- ▶ Locate dining facilities near work centers and housing/dormitory populations.
- ▶ Co-locate retail shops and services, where possible, to minimize sprawl and to increase options for shared parking.
- ▶ Provide clear signage where multiple functions are collocated.

## **Religious Facilities**

- ▶ Design chapels that can serve all faiths, and that can also be used to accommodate secular programs.
- ▶ Provide classrooms for religious education.



## **Other Community Support Facilities**

- ▶ CNI will liaison with other DOD agencies to provide high-quality educational facilities, health care facilities, and transient family lodging to Navy personnel. Such facilities should be sited in community support areas, conform to Base Exterior Architecture Plans, and provide a welcoming, comfortable, safe environment.

# OTHER PROGRAMS

***“Base appearance enhances quality of life... quality of life affects retention... retention is the foundation of readiness...”***



The guidelines discussed thus far are the main considerations that provide for quality Navy facilities. Another way of achieving quality facilities includes incorporating the end user's efforts and input. Encouraging user participation is one of the best methods to maintain a beautiful and functional neighborhood.

Another opportunity for developing pride in ownership among the Navy community is through Navy-wide, Regional, and installation awards. These awards help to foster a sense of leadership and teamwork among all involved, including the Navy personnel, that share the base with residents. The recipients of these awards, judged against a comprehensive set of criteria, have helped to develop and maintain a sense of confidence and satisfaction in their communities.

## **The Naval Construction Force (NCF) Program**

- ▶ Through regular deployments and training, the NCF delivers facilities construction and renovation projects to DOD installations world wide. Utilizing Seabees for project accomplishment
- ▶ The FIRST Naval Construction Division issues an annual call-to-work to solicit projects. Project candidates should be multi-trade, general construction with expected durations not to exceed 12 months. The local activity is required to complete all necessary planning documentation. Central funding for preparing designs, specifications, and bills of materials are available upon request.
- ▶ Once onsite, Seabee units and detachments maintain the flexibility to react to unforeseen, high priority projects for which Seabees can be a valuable quick response option.
- ▶ Contingency operations may impact Seabee availability to execute construction readiness projects.

# FACILITIES AWARDS PROGRAM

*Award programs formally recognize facility improvement efforts throughout the Navy and Department of Defense.*

Awards programs provide motivation and positive reinforcement to personnel who consistently make base appearance a top priority. Major awards for facilities excellence include the following:

## Naval Facilities Engineering Command (NAVFAC) Design Awards Program

- ▶ NAVFAC's program offers several awards recognizing work that demonstrates and promotes design excellence with respect to the built and natural environment. The Design Awards Program is held annually.

## Installation Excellence Award

- ▶ The award recognizes outstanding and innovative efforts of the people who operate and maintain Navy installations.
- ▶ Excellent installations enable better mission performance and enhance the quality of life for Navy personnel and their families. Each winning installation succeeds in providing excellent working, housing and recreational conditions.





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